

**AMENDMENTS TO THE CLAIMS**

This Listing of Claims will replace all prior versions and listings of claims in this application.

Listing of Claims:

1. (Previously Presented) A method implemented in a system, said system comprising a first computer and at least one other computer which is located remotely from the first computer and interconnected by a communication system, said method for conducting an auction of a plurality of items wherein at least the first computer receives bids and determines an allocation of at least one of the items, the auction including a dynamic auction phase followed by a later phase, the later phase comprising a package auction, the method comprising:

- a) implementing the dynamic auction phase on said first a computer, said dynamic auction phase comprising:
  - a1) receiving bids at the first computer from at least one bidder using the at least one other computer, said bids including at least an indicator of at least one of the items;
  - a2) determining whether the dynamic auction phase of the auction should continue, based on received bids;
  - a3) outputting auction information; and
  - a4) repeating a1) – a3) if the dynamic auction phase of the auction is determined to continue;
- b) changing from the dynamic auction phase to the later phase, following a determination not to continue the dynamic auction phase; and
- c) implementing the later phase of the auction on said first a computer, the later phase comprising a package auction, said later phase comprising:

- c1) receiving bids at the first computer from at least one bidder using the at least one other computer, said bids including at least an indicator of a package of items and an associated price for the package; and
  - c2) determining an allocation of at least one of the items to one of the bidders based on received bids.
2. (Original) A method as recited in claim 1 wherein each bid received in step a1) is a package bid including at least an indicator of a package of items and an associated price for the package.
3. (Original) A method as recited in claim 2 wherein bids are constrained by an activity rule in the dynamic auction phase.
4. (Original) A method as recited in claim 3 wherein bids are constrained by a revealed-preference activity rule in the dynamic auction phase.
5. (Original) A method as recited in claim 1 wherein said step a1) includes transmitting a price vector to bidders prior to receiving said bids.
6. (Original) A method as recited in claim 5 wherein bids are constrained by an activity rule in the dynamic auction phase.
7. (Original) A method as recited in claim 6 wherein bids are constrained by a revealed-preference activity rule in the dynamic auction phase.
8. (Original) A method as recited in claim 2 wherein the determining in the dynamic auction phase is based on solving a winner determination problem.
9. (Original) A method as recited in claim 5 wherein the determining in the dynamic auction phase is based on comparing a sum of quantity vectors with an available quantity.

10. (Original) A method as recited in claim 2 wherein the receiving in the dynamic auction phase includes the receiving of intra-round bids.

11. (Original) A method as recited in claim 5 wherein the receiving in the dynamic auction phase includes the receiving of intra-round bids.

12. (Original) A method as recited in claim 1 wherein the later phase comprises a scaled bid package auction.

13. (Original) A method as recited in claim 12 wherein the determining in the later phase further includes determining a payment for each winning bidder.

14. (Original) A method as recited in claim 13 wherein the determined allocation of items and payments is a core outcome relative to the received bids in the later phase.

15. (Original) A method as recited in claim 13 wherein the determined allocation of items and payments is a core outcome relative to the received bids in the dynamic auction phase and the later phase.

16. (Original) A method as recited in claim 13 wherein the determined allocation of items and payments is a bidder-optimal core outcome relative to the received bids in the later phase.

17. (Original) A method as recited in claim 13 wherein the determined allocation of items and payments is a bidder-optimal core outcome relative to the received bids in the dynamic auction phase and the later phase.

18. (Original) A method as recited in claim 12 wherein bids in the later phase are constrained by an activity rule.

19. (Original) A method as recited in claim 12 wherein bids in the later phase are constrained by a relaxed revealed-preference activity rule.

20. (Original) A method as recited in claim 1 wherein the later phase comprises a dynamic package auction.

21. (Original) A method as recited in claim 20 wherein the determining in the later phase further includes determining a payment for each winning bidder.

22. (Original) A method as recited in claim 21 wherein the determined allocation of items and payments is a core outcome relative to the received bids in the later phase.

23. (Original) A method as recited in claim 21 wherein the determined allocation of items and payments is a core outcome relative to the received bids in the dynamic auction phase and the later phase.

24. (Original) A method as recited in claim 21 wherein the determined allocation of items and payments is a bidder-optimal core outcome relative to the received bids in the later phase.

25. (Original) A method as recited in claim 21 wherein the determined allocation of items and payments is a bidder-optimal core outcome relative to the received bids in the dynamic auction phase and the later phase.

26. (Original) A method as recited in claim 20 wherein bids in the later phase are constrained by an activity rule.

27. (Original) A method as recited in claim 20 wherein bids in the later phase are constrained by a relaxed revealed-preference activity rule.

28. (Original) A method as recited in claim 12 wherein the later phase comprises a proxy auction.

29. (Original) A method as recited in claim 28 wherein bids in the later phase are constrained by an activity rule.

30. (Original) A method as recited in claim 28 wherein bids in the later phase are constrained by a relaxed revealed-preference activity rule.

31. (Original) A method as recited in claim 20 wherein the later phase comprises a proxy auction.

32. (Original) A method as recited in claim 31 wherein bids in the later phase are constrained by an activity rule.

33. (Original) A method as recited in claim 31 wherein bids in the later phase are constrained by a relaxed revealed-preference activity rule.

34. (Original) A method as recited in claim 12 wherein the determining in the later phase is based on solving a winner determination problem.

35. (Original) A method as recited in claim 20 wherein the determining in the later phase is based on solving a winner determination problem.

36. (Original) A method as recited in claim 28 wherein the determining in the later phase is based on solving a winner determination problem.

37. (Original) A method as recited in claim 31 wherein the determining in the later phase is based on solving a winner determination problem.

38. (Original) A computer implemented system for conducting an auction of a plurality of items wherein at least one computer receives bids and determines an allocation of at least one of the items, the auction including a dynamic auction phase followed by a later phase, the later phase comprising a package auction, the system comprising:

- a) means for implementing the dynamic auction phase on a computer, said means for implementing the dynamic auction phase comprising:

- a1) means for receiving bids from at least one bidder, said bids including at least an indicator of at least one of the items;
  - a2) means for determining whether the dynamic auction phase of the auction should continue, based on received bids;
  - a3) means for outputting auction information; and
  - a4) means for repeating a1) – a3) if the dynamic auction phase of the auction is determined to continue;
- b) means for changing from the dynamic auction phase to the later phase, following a determination not to continue the dynamic auction phase; and
  - c) means for implementing the later phase of the auction on a computer, the later phase comprising a package auction, said means for implementing said later phase comprising:
    - c1) means for receiving bids from at least one bidder, said bids including at least an indicator of a package of items and an associated price for the package; and
    - c2) means for determining an allocation of at least one of the items to one of the bidders based on received bids.

39. (Original) A system as recited in claim 38 wherein the means for receiving bids of a1) receives a package bid including at least an indicator of a package of items and an associated price for the package.

40. (Original) A system as recited in claim 39 wherein the means for receiving bids includes means to constrain said bids by an activity rule.

41. (Original) A system as recited in claim 40 wherein the means for receiving bids includes means to constrain bids by a revealed-preference activity rule.

42. (Original) A system as recited in claim 38 which further includes means for transmitting a price vector to bidders and means for enabling the means for receiving bids to receive said bids only after said price vector has been transmitted.

43. (Original) A system as recited in claim 42 which includes means to constrain bids by an activity rule in the dynamic auction phase.

44. (Original) A system as recited in claim 43 wherein the means to constrain bids constrains the bids by a revealed-preference activity rule.

45. (Original) A system as recited in claim 39 wherein the means for determining of a2) solves a winner determination problem.

46. (Original) A system as recited in claim 42 wherein the means for determining of a2) compares a sum of quantity vectors with an available quantity.

47. (Original) A system as recited in claim 39 wherein the means for receiving bids of a1) receives at least intra-round bids.

48. (Original) A system as recited in claim 42 wherein the means for receiving bids of a1) receives at least intra-round bids.

49. (Original) A system as recited in claim 38 wherein means for implementing the later phase comprises means for implementing a sealed bid package auction.

50. (Original) A system as recited in claim 49 wherein the means for determining of c2) further includes means determining a payment for each winning bidder.

51. (Original) A system as recited in claim 50 wherein the means for determining produces a core outcome relative to the received bids of c1).

52. (Original) A system as recited in claim 50 wherein the means for determining produces a core outcome relative to the received bids of a1) and c1).

53. (Original) A system as recited in claim 50 wherein the means for determining produces a bidder-optimal core outcome relative to the received bids of c1).

54. (Original) A system as recited in claim 50 wherein the means for determining produces a bidder-optimal core outcome relative to the received bids of a1) and c1).

55. (Original) A system as recited in claim 49 which includes means to constrain bids received by the means for receiving of c1) by an activity rule.

56. (Original) A system as recited in claim 49 which includes means to constrain bids received by the means for receiving of c1) by a relaxed revealed-preference activity rule.

57. (Original) A system as recited in claim 38 wherein the means for implementing the later phase implements a dynamic package auction.

58. (Original) A system as recited in claim 57 wherein the means for determining in the later phase further includes means for determining a payment for each winning bidder.

59. (Original) A system as recited in claim 58 wherein the means for determining an allocation of items and payments determines a core outcome relative to the received bids in the later phase.

60. (Original) A system as recited in claim 58 wherein the means for determining an allocation of items and payments determines a core outcome relative to the received bids in the dynamic auction phase and the later phase.

61. (Original) A system as recited in claim 58 wherein the means for determining an allocation of items and payments determines a bidder-optimal core outcome relative to the received bids in the later phase.



62. (Original) A system as recited in claim 58 wherein the means for determining an allocation of items and payments determines a bidder-optimal core outcome relative to the received bids in the dynamic auction phase and the later phase.

63. (Original) A system as recited in claim 57 which further includes means for constraining bids in the later phase by an activity rule.

64. (Original) A system as recited in claim 57 which further includes means for constraining bids in the later phase by a relaxed revealed-preference activity rule.

65. (Original) A system as recited in claim 49 wherein the means for implementing the later phase implements a proxy auction.

66. (Original) A system as recited in claim 65 which further includes means for constraining bids in the later phase by an activity rule.

67. (Original) A system as recited in claim 65 which further includes means for constraining bids in the later phase by a relaxed revealed-preference activity rule.

68. (Original) A system as recited in claim 57 wherein the dynamic package auction implemented by the means for implementing the later phase comprises a proxy auction.

69. (Original) A system as recited in claim 68 which further includes means for constraining bids in the later phase by an activity rule.

70. (Original) A system as recited in claim 68 which further includes means for constraining bids in the later phase by a relaxed revealed-preference activity rule.

71. (Original) A system as recited in claim 49 wherein the means for determining of c2) solves a winner determination problem.

72. (Original) A system as recited in claim 57 wherein the means for determining of c2) solves a winner determination problem.

73. (Original) A system as recited in claim 65 wherein the means for determining of c2) solves a winner determination problem.

74. (Original) A system as recited in claim 68 wherein the means for determining of c2) solves a winner determination problem.

75. (Currently Amended) A computer system for determining an allocation of items and payments among a plurality of bidders wherein bids are received at the system and the allocation of the items and the payments are determined by the system based on the received bids, comprising:

means for receiving bids, including package bids for at least two of the items, and

means for processing the received bids to determine an outcome including comprising an allocation of the items among the bidders and payments associated with the bidders, wherein the determined outcome is a core outcome with respect to the received bids, said core outcome having an implied profit allocation that is feasible for the coalition of the whole and unblocked by any coalition.

76. (Previously Presented) A system as recited in claim 75 wherein the determined outcome is a bidder-optimal core outcome with respect to the received bids.

77. (Currently Amended) A method for determining an allocation of items and payments among a plurality of bidders, said method implemented in a system comprising a first computer and at least one other computer which is located remotely from the first computer and interconnected by a communication system, wherein bids are received using the at least one other computer and the allocation of the items and the payments are determined by the first computer based on the received bids, comprising:

receiving bids, including package bids for at least two of the items, using the at least one other computer,

communicating the received bids to the first computer, and

processing the received bids using the first computer to determine an outcome including comprising an allocation of the items among the bidders and payments associated with the bidders, wherein the determined outcome is a core outcome with respect to the received bids, said core outcome having an implied profit allocation that is feasible for the coalition of the whole and unblocked by any coalition.

78. (Previously Presented) A method as recited in claim 77 wherein the determined outcome is a bidder-optimal core outcome with respect to the received bids.

79. (New) A computer readable medium storing a sequence of instructions which, when executed by a computer system implements a program for determining an allocation of items and payments among a plurality of bidders wherein bids are received at the computer system and the allocation of the items and the payments are determined by the system based on the received bids, comprising:

receiving bids, including package bids for at least two of the items, and

processing the received bids to determine a core outcome with respect to the received bids, said core outcome including an allocation of the items among the bidders and payments associated with the bidders, whose implied profit outcome is feasible for the coalition of the whole and unblocked by any coalition.

80. (New) A computer readable medium as recited in claim 79 wherein the determined outcome is a bidder-optimal core outcome with respect to the received bids.